mizing "rational" and "irrational" behavior and attaching greater importance to the former is arbitrary and limits our understanding.

Other essayists in the collection show how the exclusion of women from the focus of their disciplines, or misinterpretation of women's roles within the institutions under study, leads to incomplete or faulty analysis.

Marcia Millman shows how value judgments creep into the analysis of women as criminals and women as victims in the sociology of deviance. She suggests that men are always depicted as more interesting in playing the deviant role. Women are not seen as initiators or as "correctly" motivated. In the words of the essay's title, when they engage in deviant behavior women are thought to "do it all for love." Millman doesn't give us a systematic analysis of why women do commit crimes. I suspect she would agree that *some* actually are motivated by love, but in pointing to the prejudice implicit in the sociology of deviance her contribution is heuristic. (Why don't researchers ask men whether they do it for love? Probably a goodly number do.)

Judith Lorber's article discusses women as medical practitioners and as patients and indicates that women are discriminated against in both roles. Like Millman she points to the enormous neglect implicit in women's total absence from studies presuming to describe an entire profession.

Gaye Tuchman examines the reasons why women's active and visible roles as sponsors and purveyors of culture seem to be largely ignored in both popular and academic analyses of the social structure of the art, literary, and musical worlds. In the course of her examination Tuchman calls attention to a number of notable women painters, composers, and musicians.

Are women really "just there," as Lyn H. Lofland asks in her probe of the invisibility of women in urban sociology, even in work done by liberals such as Herbert Gans and Elliot Liebow? Are women only supporting cast because they are not hanging out on the street corners or sitting in the bars where our urbanologists can see and get to know them? If they are, tell us why and what consequences this has for community life and for the society. If they are not, as Lofland's inquiry suggests, let us send our urbanologists into the supermarket, the coffee shop, and the beauty shop as well as the bar and the poolroom.

In her article on women and the structure or organizations, Rosabeth Moss Kantor might well have conceptualized the inattention to women she addresses by adopting Lofland's use of "thereness." Because work has so long been considered a male enterprise, in spite of the fact that the work force includes almost as many women as men, even the most sophisticated studies of organizations have excluded from analysis the jobs typed as female, such as secretary. Thus the dynamic interplay between people in male jobs and people in female jobs is missed, as well as the description of careers and work lives of the women who hold these ancillary but integral and crucial positions.

Kantor provides a fruitful discussion of how models used in organizational analysis direct the analytic eye away from women's contributions in the workplace, as well as provide legitimation for the exclusion of women from jobs of high rank and power.

It would be useful indeed if scholarship inspired by the women's movement pressed sociological inquiry into the avenues suggested in this volume as well as directed more attention to blue-collar workers, the poor, and minorities (see the essays of Roby and Myers especially). A look at current issues of several journals shows that more social scientists are turning their attention to women. It is not so clear that they have accepted the notion that other major areas of study ought to include analysis of women's part in social units rather than isolate women's activity for separate study. The study of "organizations," for example, ought to include women and not deal only with men in the implied expectation there will be a separate study of "women and organizations." I cannot agree with some of the writers in this volume (whose views are representative of those of a number of serious feminist sociologists) that there must be, or are, special women's models or special insights that can be attained only within the context of a female sociology done by women. If there are special insights or techniques stemming from a feminist perspective, they must be communicated to all. If there are not, both men and women should apply themselves more diligently to adopting a more value-free approach. *Another Voice* offers important insights toward new and corrective areas of work in the social sciences. One wishes they had not been labeled "feminist perspectives" but "new perspectives."

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Theoretical Chemistry

Group Theoretical Techniques in Quantum Chemistry. C. D. H. CHISHOLM. Academic Press, New York, 1976. x, 272 pp., illus. $22.25. Theoretical Chemistry, vol. 5.

The past decade has seen the arrival of tens of books on group theory. Those that have not been mainly formal have generally dealt with a set of what are now traditional applications of symmetry to chemistry, such as simple selection rules, classification of electronic and vibrational states, molecular orbital simplifications, ligand and crystal field theory, and concepts related to solids. As a work aimed primarily at chemists, *Group Theoretical Techniques in Quantum Chemistry* goes beyond the traditional approach and presents the formal theory relating to a wide-ranging set of topics in addition to some applications that should be of interest to theoreticians and experimentalists in chemical physics.

After a systematic development of introductory material on molecular symmetry groups, linear algebra, and group representations, Chisholm describes how matrices for irreducible representations for finite groups can be constructed and used in various conventional ways in molecular problems. It is pleasing to find a discussion of the often-overlooked symmetric and antisymmetric direct products included. The text then successfully treats the symmetric groups (permutations) and their applications in symmetry simplifications of many-electron systems. Like some of the other chapters, this one is aimed primarily at quantum chemists interested in fundamental properties of electronic wave functions including spin.

The importance of the method of irreducible tensors in experimental chemical physics is becoming more evident in the literature, so the clear, detailed account this book gives of the basic theory of continuous groups through the method of irreducible tensors and the chapters on tensor operators and direct products and angular momentum coupling coefficients are timely features. There is also a nice chapter on the quantum mechanics of simple systems in which exactly soluble problems as the hydrogen atom, the harmonic oscillator, and the rigid rotor are dealt with by means of group theory.

In contrast to many of the other chemically oriented books on group theory, the present volume seems to contain sufficient fundamental theory to provide the careful student with the apparatus to describe his own applications. Thus its

dearth of extensive examples of symmetry applied to quantum chemical problems is not a deficiency. The formal theory is in any event presented in such a manner that its relevance to practical problems is usually apparent. Topics in the theory of radiation-matter interactions and in solid state physics are not considered explicitly, but graduate students in chemical physics will find this excellent book to contain a useful coverage of the general principles needed for most formal applications of symmetry to chemistry.

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Orbital Symmetry

Symmetry Rules for Chemical Reactions. Orbital Topology and Elementary Processes. RALPH G. PEARSON. Wiley-Interscience, New York, 1976. xii, 548 pp., illus. $24.50.

The "conservation of orbital symmetry" is today such a familiar part of our chemical vocabulary that it is a surprise to remember that the seminal papers on this subject by R. B. Woodward and Roald Hoffmann appeared as recently as 1965. From the rationalization of the stereospecificity of electrocyclic reactions, the theory has been expanded to explain diverse chemical reactions, from simple isomerizations and dissociations to transition metal catalysis.

Pearson was one of those who very early recognized the wide applicability of symmetry rules for chemical reactions. The present book appears to be an outgrowth of a summary of the subject Pearson published in *Accounts of Chemical Research* in 1971. This mature book is written with enormous insight and with grace and style.

As is implied by its subtitle, the book is based on the molecular orbital approach. It is a tribute to the author's skill that, despite the mathematical rigor, a knowledge of the pictorial shapes of the molecular orbitals is often all that is required to follow the arguments. In particular, knowledge of the symmetry of the frontier orbitals (Fukui, 1952), that is, the highest occupied molecular orbital and the lowest unoccupied orbital, frequently allows one to determine whether a reaction pathway is allowed or forbidden, that is, whether the energy of activation is low or high. Reaction is most readily achieved when the new bond that is formed has the same symmetry as the bond that was broken, that is, when the orbital symmetry is conserved. Pearson takes up the reaction coordinate of a variety of interesting reactions and examines the symmetry landscape along the way. Although symmetry rules are best expressed in the language of group theory, once again the author's skill allows the reader to manage the arguments with only a thorough knowledge of character tables, symmetry species, and their manipulation.

The book consists of six chapters. Included in the first two insightful chapters, dealing with selection rules, are procedures for determining orbital and state correlations, the latter being essential for the derivation of the noncrossing rules. Chapter 3 explains the shapes of simple molecules of various symmetries and chapter 4 deals with reaction pathways for some of these. The mechanism of more complex reactions is discussed in chapter 5. Of special interest to organometallic chemists is the analysis of oxidative-additions, ligand migrations, and oxidative cyclizations. The final chapter deals with photochemical reactions.

The book is remarkably free of errors, and the drawings are simple and clear. One could sometimes wish that Pearson would restrain his penchant for abbreviations. A glossary of these would be useful. This book will take its place with two earlier important books by Pearson and collaborators, *Kinetics and Mechanism* and *Mechanisms of Inorganic Reactions*. Chemists will be grateful to him for putting into perspective one of the most powerful tools for understanding and predicting reaction pathways.

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Brain Chemistry

Neurotransmitter Amino Acids. NEIL DAVIDSON. Academic Press, New York, 1976. viii, 180 pp., illus. $12.75.

Some useful books open new fields; others restate what is known, presumably for the benefit of people who already realize that they should know it. *Neurotransmitter Amino Acids* falls squarely in the second category: It describes evidence accumulated during the past two decades that glutamate, aspartate, gamma-aminobutyric acid, glycine, and taurine function as neurotransmitters in the mammalian central nervous system. It is, in general, well written, well illustrated, and of a size compatible with the dimensions of the human hand. It should provide a good starting point for students and investigators seeking entree to the literature; it accurately describes what believers believe.

Had the author chosen to venture beyond currently accepted paradigms for neurotransmitter amino acid research, his book might have been a lot more. Most of these amino acids also undergo important reactions in the brain which seem worth describing for their own sakes, and which must somehow be related to their roles as neurotransmitters. An imaginative discussion of their fates could have generated a book that opened a field or two, and didn't simply celebrate what is already known. But this opportunity is largely missed. For example, the author makes much of the relatively high concentrations of glutamate in the brain but fails to comment on the similarly high glutamate concentrations in most proteins and in such body fluids as plasma and milk; the index refers to "incorporation [of glutamate] into proteins and peptides," but the discussion thus referenced (six words on p. 37) says nothing about the charging of brain glutamic acid transfer RNA or about the prevalence of glutamate in specific brain peptides or proteins (including the all-important pyroglutamyl residues in several of the hypothalamic releasing factors); and there is no mention of the gamma-glutamyl cycle, of the much-discussed neurotoxicity associated with very high doses of glutamate, of the mechanism within brain capillaries that mediates the uptake of glutamate (and other acidic amino acids) from the blood, and so forth. The interactions of glutaminergic neurons with neurons that don't utilize amino acids as their transmitters are mentioned only in a single context, in connection with the poorly understood enhancement by reserpine of brain glutamate turnover; the brief discussion of the effects of "dietary factors"—limited (surprisingly) to vitamin B_6—on "neurochemical systems" fails to mention the involvement of pyridoxal phosphate in reactions (other than synthesis of gamma-aminobutyric acid) involving glutamate.

Again, *Neurotransmitter Amino Acids* is a small book, and it amply satisfies the mandate implied in its title. Perhaps someone else will write the book that integrates our knowledge of amino acids as neurotransmitters with that of the numerous and important *other* things these compounds do in brain.

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